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Factors Influencing the Willingness of Pregnant Women in Rural Ghana to Adopt Postpartum Family Planning

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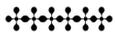
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ABSTRACT

Introduction

Uptake of postpartum family planning (PPFP) remains very low in sub-Saharan Africa. Very little is known about how pregnant women arrive at their decisions to adopt PPFP. This information is needed to guide the development of interventions to promote PPFP.

Method

We conducted a survey among pregnant women attending antenatal clinics in a rural district in southern Ghana to identify determinants of their willingness to adopt PPFP. We used univariate and multivariate analysis to explore predictors of the willingness to adopt PPFP.

Results

We interviewed 1914 pregnant women attending antenatal clinics in four health facilities. About 84% considered PPFP acceptable, and 70% expressed a willingness to adopt a method after delivery. The most preferred methods of PPFP were the injectables (31.5%), exclusive breastfeeding (16.7%), and oral contraceptive pills (14.8%). The perception of partner acceptability (O.R.=5.29, 3.23-8.38), acceptability of PPFP by the pregnant woman (O.R.=3.54, 1.65-7.60), having had prior experience with the use of injectables (O.R.=3.06, 1.71-5.47) and carrying an either unwanted or unexpected pregnancy (O.R.=1.50, 1.11-2.02) were independent predictors of a pregnant woman's willingness to adopt PPFP. Conversely, women who had heard of the diaphragm (O.R.=0.48, 0.30-0.76) were less likely to want to adopt PPFP.

Conclusion

Male partner approval, acceptability of PPFP by the pregnant woman, past experience with the use of injectables, and the circumstances under which the current pregnancy occurred are the major determinants of the willingness of a pregnant woman to adopt PPFP. Procedures adopted at antenatal and early postnatal clinics should take these determinants into consideration.

Background

The United Nation's Millennium Development Goal (MDG) 5 aims at reducing maternal mortality by three quarters, between 1990 and 2015. An important intervention towards achieving this target is the promotion of modern family planning (FP) methods among women in sub-Saharan Africa (1,2). In spite of various interventions, uptake of modern contraceptive methods remains low in most of sub-Saharan Africa and is a major cause of unwanted pregnancies, unsafe abortions, unplanned deliveries, and maternal mortality. Unless uptake of modern contraceptive methods is increased substantially within a short time, MDG 5 will not be achieved (1,3).

The periods of pregnancy and immediately after are considered opportune periods for counseling women on the adoption of modern FP methods. This is because this period is often associated with frequent encounters between a woman and the formal health delivery system (4). To promote optimal spacing of births, postpartum family planning (PPFP) has been a major component of the safe motherhood initiative (5). The objective has been to offer contraception during the extended postpartum period in order to afford optimal child spacing and, as a further outcome, improved maternal health and child survival. It has been estimated that PPFP can prevent about 30% and 10% of maternal and child mortalities, respectively (6).

In spite of various interventions to promote PPFP, its uptake in sub-Saharan Africa has remained very low. Data from Demographic and Health Surveys (DHS) in 27 countries suggest that less than 35% of women who wish to avoid pregnancy during the postpartum period use any form of modern contraception. Uptake is particularly low among women living in the rural areas of sub-Saharan Africa (7,8).

Very little is known about how pregnant women arrive at their PPFP decisions and few studies have focused on the FP needs of women in the postpartum period. This information is, however, critical to the design of strategies for promoting PPFP. An improved understanding of the factors that influence a woman's decision-making on PPFP in sub-Saharan Africa is needed to guide the development of appropriate interventions to promote uptake. (4,9)

Ghana

Unintended childbearing in Ghana is estimated at about 0.7 births per woman (10). A major goal of the 1994 Ghana National Population Policy is to reduce the total fertility rate from 5.0 in 2000 to 3.0 by 2020. To this end, achieving the target of increasing the contraceptive prevalence rate from 15 percent (in 2000) to 50 percent by the year 2020 is an important national priority (11).

According to the 2008 Ghana Demographic and Health Survey (12), only 40% of the demand for FP is currently met. The level of unmet need for spacing is higher than the level of unmet need for limiting children (23 % and 13 %, respectively). The Ghana DHS further finds that while there is an almost equal level of unmet need for limiting births among rural and urban women (12.8% versus 12.9%), rural women have a greater need for child spacing (24.7% versus 19.4%). Rural women in Ghana have a higher level of unmet need for FP methods than urban women (64.3% versus 54.4%). Very little is known about the unmet need for PFP and the factors likely to influence the uptake of PFP in the country.

We conducted a survey among pregnant women presenting to antenatal clinics in rural and semi-rural health facilities in the Central Region of Ghana. The objective was to explore factors that influence the willingness of pregnant women to adopt PFP.

Methodology

Study sites: The study was conducted in the Mfantseman District of the Central Region of Ghana. This district is located on a 21-kilometre stretch of the Atlantic coastline of Ghana and extends about 13 kilometers inland. The district is essentially rural, except for two towns, Saltpond, and Mankessim, which are of semi-urban character.

According to the 2008 Ghana DHS, the Central Region is one of the regions with the most adverse FP indicators. It has the highest level of unmet need (50%), the largest gap (1.1%) in wanted versus actual fertility, and the lowest level (9.0%) of FP discussion between women and staff of health facilities. The Mfantseman municipality was selected for this study on account of recent reports of increasing incidence of unsafe abortions, and also on account of familiarity of the research team with this district.

All pregnant women attending antenatal clinic at the Saltpond Government Hospital (semi-rural), Mankessim Health Centre (semi-rural) and the Biriwa and Anomabo Health Centers (rural) between January 2012 and April 2012 were targeted to be interviewed. The facilities were purposefully-selected in order to provide a mix of semi-rural and rural settings. All interviews were conducted within the premises of the health facilities. A five-page questionnaire was used in the survey. It explored questions related to the willingness of the respondent to adopt a modern FP method during the extended postpartum period. Areas covered in the questionnaire included respondents' demographic background, demographic characteristics of male partners, and issues pertaining to the nature of relationships between the respondents and the male partners. Other issues explored were respondents' reproductive history, awareness and use of various FP methods, acceptability of PFP,

and PFP intentions. The questionnaire consisted almost entirely of closed-ended questions and was pre-tested in health facilities that were not selected to participate in the study. The questionnaire was administered by research assistants who resided with the municipality and were therefore familiar with the culture and traditions of the women attending the clinics. The minimum qualification of interviewers was either polytechnic or university degree. Interviewers were trained over a period of seven days, including five days of practice in the selected facilities. All questionnaires were administered in the language that the respondent indicated she was comfortable with.

The data were double-entered using the software EPI-DATA. Information was verified and cleaned to achieve a single cleaned data set. Discrepancies in the data sets were resolved by referring to the original entry on the questionnaires. The clean data were exported into STATA (version 11) for analysis. Descriptive analysis was performed. This was followed by explorative univariate analysis under the various sub-themes of the questionnaire. Factors found to be significantly associated (P-value <0.05) with the main outcome of interest (willingness to adopt PFP) were included in a multivariate model to identify significant independent predictors of the outcome of interest under the various sub-sections.

Sample size: A target sample size of 1900 was set on the assumption that 50% (to achieve maximum variance) of pregnant women will express the desire to adopt a modern FP method, and this number will permit 80% power to achieve an estimation of the actual percentage of women willing to adopt a modern FP method within a margin of error of 3%. The total number of deliveries in the Mfansteman municipality in 2009 was about 4000.

Ethical consideration: Ethical approval was obtained from the Ethics Review Committee of the Ghana Health Service (GHS). Institutional approval was also obtained from the Municipal Health Directorate (MHD) and the heads of the facilities where the survey was conducted. Informed consent was obtained from each participant before questionnaire administration by the individual's signature or by thumb print if the respondent could neither read nor write in English.

Results

A total of 1914 pregnant women were interviewed in the four health facilities as follows. About 52% of them were interviewed at the health facilities in Saltpond and Mankessim (semi-urban), and the remaining at the health centers in Anomabo and Biriwa. The mean age was 25.6 years (standard deviation 6.5). The majority were Christians who belonged to the *Fanti* ethnic group. About a fifth of

the pregnant women had had no formal education. The dominant occupations were fish mongering and petty trading.

About a third (35.2%) of pregnant women did not already have any child. Of those who had at least one child, the average number of children was 2 (standard deviation-2). The majority of women (70%) indicated that the pregnancy they were carrying was either unexpected or unwanted at the time it occurred. About 84% considered the use of modern FP methods to delay pregnancy in the extended postpartum period to be acceptable, and 70% expressed a willingness to adopt a method after delivery. The most preferred methods of modern PFP were injectables (31.5%), exclusive breastfeeding (16.7%), and oral contraceptive pills (14.8%). For women desiring future pregnancies, the average desired time before a next pregnancy was 4.6 years (standard deviation 1.5 years). The most widely known methods of FP were the male condom (86.4%), injectables (80.5%) and the female condom (78.0%). However, the most widely used were the withdrawal (29.5%), male condom (26.9%), and rhythm (23.7%) methods.

Effect of sociodemographic background

In univariate analysis, a pregnant woman's sociodemographic background, age, educational level, religion, occupation, and the number of children were significantly associated with the willingness to adopt PFP. (Table 1) In multivariate analysis, however, only age (being more than 20 years of age: O.R.=1.47, 1.07-2.01) and number of children (having one or more children: O.R.=1.19, 1.07-1.34) were the most significant predictors of the willingness to adopt a modern FP method.

Among factors related to the sociodemographic background of partners and the nature of the relationship, partner's age, level of education, ethnic background, place of residence, and having had children from a previous marriage were factors that were significantly associated with a pregnant woman's willingness to adopt PFP. The willingness to adopt PFP was also significantly influenced by the length of time a pregnant woman was in the marriage to the current partner (Table 2). In multivariate analysis, pregnant women who were married to *Fanti* partners (O.R.=1.42, 1.06-1.90) were significantly likely to adopt PFP. The greater length of time a pregnant woman was in the current marriage (O.R.=1.26, 1.08-1.46), the more likely she was to be willing to adopt a PFP method.

Effect of respondents' reproductive history and circumstances of current pregnancy

In univariate analysis, the number of times a woman had been pregnant, having a history of induced or spontaneous abortion (i.e. miscarriage), and the circumstance (desire and timing) of the current

pregnancy were factors that significantly influenced the willingness of a pregnant woman to adopt a PFP method (Table 3). In multivariate analysis however, the higher the number of times a woman had been pregnant (O.R.=1.46, 1.11-1.90) and the fact that she was carrying an unwanted or unexpected pregnancy (O.R.=1.34, 1.13-1.59) made her more likely to be willing to adopt PFP. On the other hand, a pregnant woman was less likely to be willing to adopt PFP if one of more of previous pregnancies has ended in abortion or miscarriage.

Effect of perception of risk of pregnancy and past experience of PFP

In univariate analysis, women who were aware of the fact that exclusive breastfeeding could be an effective PFP method and that a woman could get pregnant within three months of delivery were significantly associated with willingness to adopt a PFP method (Table 3). In multivariate analysis however, only the knowledge that exclusive breastfeeding (O.R.=1.90, 1.38-2.60) could be an effective postpartum contraceptive was a significant predictor of the willingness to adopt a PFP method.

Effect of knowledge (*ever heard*) of various FP methods

In univariate analysis, respondents who had heard about the pill, injectables, implants, male and female condom, diaphragm and foaming tablets as forms of modern contraceptive methods were more willing to adopt PFP than those who had not. Participants who had also heard about the use of exclusive breastfeeding as a contraceptive option were also significantly likely to want to adopt a PFP method (Table 4). In multivariate analysis, respondents who had heard of exclusive breastfeeding (O.R.=1.56, 1.12-2.18) and the use of implants (O.R.=1.64, 1.11-2.41) were more likely to want to adopt PFP. Conversely, pregnant women who had heard of the diaphragm (O.R.=0.59, 0.38-0.93) were less likely to want to adopt a PFP method.

Effect of use (*ever used*) of various FP methods

In univariate analysis, the willingness of a pregnant woman to adopt PFP was significantly influenced by her history of use of the pill, injectables, or emergency contraception. Conversely, pregnant women who had prior experience with the use of an IUD were less likely to want to adopt PFP (Table 4). In multivariate analysis, pregnant women with prior experience with the use of the pill (O.R.=2.22, 1.59-3.12) and injectables (O.R.=3.72, 2.61-5.30) were more willing to want to adopt a PFP method than those who had not. Conversely, pregnant women with prior experience with the use of IUD (O.R.=0.13, 0.05-0.38) were less likely to want to adopt PFP.

In a model that included the factors of *ever heard* and *ever use* of various FP methods that significantly influence the willingness of pregnant women to accept PFP, the strongest predictors of the willingness to adopt a PFP method was a history of use of the injectables and the pill. On the other hand, previous experience with the use of an IUD and the knowledge of the diaphragm as an FP method were predictive of a lack of willingness to adopt PFP.

Acceptability of PFP to pregnant woman and relatives

In univariate analysis, the willingness of pregnant woman to adopt PFP was influenced by personal consideration that it was an acceptable practice. It was similarly influenced by the consideration that the partner will consider her use of PFP acceptable, that the pregnant woman believes she requires the permission of the partner to use PFP; and her belief that she can use PFP covertly. The willingness of pregnant women to adopt PFP was similarly affected by the perception that her mother, mother-in-law, father-in-law, and religious leaders will consider the practice acceptable (Table 5). In multivariate analysis however, only personal consideration that the practice was acceptable (O.R.=3.21, 1.64-6.26) and the perception that her partner will consider the practice acceptable (O.R.=3.26, 1.94-5.48) were significantly predictive of their willingness to adopt PFP.

Overall model

In a logistic regression model that included identified predictors (outcome of multivariate analysis) of the willingness of pregnant women to adopt PFP from the different themes that were evaluated, the perception of partner acceptability (O.R.=5.29, 3.23-8.38) and personal conviction of acceptability (O.R.=3.54, 1.65-7.60) of PFP were identified as independent predictors of a pregnant woman's willingness to adopt PFP. Having had prior experience with using injectables (O.R.=3.06, 1.71-5.47) was similarly predictive of a pregnant woman's willingness to adopt PFP. Women who described their pregnancy as either unwanted or ill-timed (O.R.=1.50, 1.11-2.02) were also likely to want to adopt PFP. Conversely, women had heard of the diaphragm (O.R.=0.48, 0.30-0.76) as a contraceptive method were significantly less likely to want to adopt PFP.

Discussion

The study has demonstrated that the majority of women in the Mfantseman District of the Central Region of Ghana consider PFP acceptable and are willing to adopt a method after delivery. However their willingness to adopt PFP depends on a number of important factors. These can be summarized as (1) perception of partner acceptability, (2) acceptability of PFP to the pregnant

woman, (3) having used an injectable in the past, and (4) carrying an unwanted or unexpected pregnancy.

Personal conviction and role of male partners

The study suggests that although personal conviction about the benefit of PFP was important, a pregnant woman's perception of how her partner will consider her decision to adopt PFP was of greater concern in the decision-making process. Pregnant women appear to need the assurance of partner acceptability before they will commit to use PFP. In general, this finding is not particularly new as several studies in Ghana and other parts of sub-Saharan Africa have pointed to the important role of male partners in the decision-making process about contraceptive use. However, what is new is the context (pregnant women deciding on PFP) within which the finding is made in this study. Analysis of data from the 1988 Ghana DHS found the three most important determinants of the use of contraception were respondents' approval of FP, discussion of FP with their partners, and respondents' level of education (13, 12). Other surveys in the country have similarly found that though there is a high desire on the part of women to adopt an FP method, apprehensions about possible disapproval by the male partners and the social consequences of unsuccessful covert use (14, 15) have hindered the translation of contraceptive awareness and desire into actual use by women.

The irony, however, is that similar surveys among men have shown that (men's acceptability of FP was not particularly different from that of women and that, except in polygamous societies, the reproductive aspirations of both men and women are similar (16). It has therefore been suggested that misperceptions by women of husbands' attitudes may be indicative of the fact that there is very little discussion between partners about FP (17).

The 1994 International Conference on Population and Development recognized men as legitimate targets for sexual and reproductive health promotion. With the emergence of HIV testing as a control intervention, couple counseling has also been recognized as a strategy for enhancing access to HIV testing and care, including prevention of mother-to-child HIV transmission (18,19). In spite of such overwhelming evidence, the model of reproductive health delivery in Ghana and sub-Saharan African countries remains female-centered, with little or no male participation. To date, no systematically-implemented interventions exist in routine settings to promote active male participation (20). It has been demonstrated in studies in Uganda and South Africa that a simple intervention such as written letter of invitation to a male partner to attend an antenatal clinic with his spouse can significantly increase male attendance and promote couple counseling (19, 21). In a

study in Nepal, it was found that, compared with educating women alone, educating pregnant women and their male partners yielded greater net impact on a range of maternal health behaviors (22). Unless an increase in male participation in FP services is achieved, the desired substantial increase in the uptake of modern methods will not be achieved. In view of the established link between improvement in reproductive and child health, and national development, the government of Ghana and other countries in sub-Saharan Africa should consider adopting affirmative action to accelerate male participation in reproductive health care. Legislation may be required to make it both mandatory and attractive (e.g., paid leave-from-work) for male spouses to accompany their partners to at least one antenatal and early post-natal clinic where FP counseling is offered. The evidence of the absolute need to involve male partners in the promotion of FP and other aspects of reproductive health is compelling and needs to be acted upon more forcefully.

The study also found that pregnant women will be willing to adopt PFP if they considered the practice to be acceptable. This finding supports the need to sustain public health education on PFP in order to gain acceptance among pregnant women. It may also reflect an assertive stance among women in terms of making decisions about their reproductive choices. While such assertiveness may be associated with women with a higher level of education, curiously women with higher education appeared to be less willing to adopt PFP. This contrasts with the study findings among women in Accra and Lagos in Nigeria, where educational status was found to be predictor of the willingness to use modern FP methods (9, 23).

The findings of the study on the preferred methods of PFP (injectables, exclusive breastfeeding and oral contraceptive pills) coincides with the findings of the Ghana DHS. Among currently-married women in the general population, the 2008 Ghana DHS found that the two most preferred contraceptive methods for future use were the injectables (39 %) and oral contraceptive pill (21 %). The coincidence of the preferred methods (injectables and oral contraceptive pills) among women in the general population and the pregnant women in this study is a pointer to inherent preference for these methods as result of some intrinsic characteristics. The noticeable preference for injectables was also reflected in the result of the multivariate analysis where prior use of injectables was found to be a significant predictor of a pregnant women's willingness to adopt PFP. The finding however contrasts with the findings of studies in Nigeria and Kenya (among HIV positive pregnant women in the case of Kenya) where other methods of contraception were preferred (9, 24).

Studies, preferably those that employ qualitative methods, are required to provide a clearer understanding of the factors that make different contraceptive methods appeal to different population of women in different settings. In the specific case of the population in which this study

was carried out, the possibility that injectables make it possible for women to use FP discretely should be explored. In similar respect, the reasons that make knowledge or awareness of the diaphragm a disincentive to the adoption of PFP needs to be explored using qualitative approaches.

In this study, 70% of pregnant women indicated that the pregnancy they were carrying was either unexpected or unwanted. This is indicative of a high level of unmet need for FP in this population. With economic considerations making most families rethink more carefully about when and how many children they wish to have, it is not surprising that carrying an unwanted or ill-timed pregnancy is an independent predictor of the desire to adopt PFP. At present, information about the circumstances of a pregnancy is not routinely collected as part of antenatal and postnatal care in Ghana. Consideration should be given to collecting this routinely to serve as an entry point into discussions about the adoption of PFP.

Limitations

As a cross-sectional study, the findings of this study can at best be considered hypothetical and, therefore, subject to further investigation with the use of more rigorous methodologies. Secondly, although the majority of pregnant women interviewed expressed a willingness to adopt PFP, data from Ghana and other parts of sub-Saharan Africa confirm that uptake of PFP is very low. This implies the existence of a wide gap between intentions and actual use of FP methods. A follow-up of the cohort of women interviewed in this study to ascertain the actualization or otherwise of their stated intentions would provide a better understanding of the factors that contribute to the existence of such a gap between intentions to adopt modern family planning and actual use.

The study employed a quantitative approach to collect data. In traditional African society, aspects of issues of sexuality and reproduction health tend to be considered private. It is therefore possible that some of the themes discussed in this study would have been better explored using qualitative approaches such as in-depth interviews and focus group discussions. Similarly, findings such as the seeming preference for injectables and disdain for the diaphragm, and the role of male partners in the decision-making process, would be further elucidated using qualitative approaches.

Conclusion

Male partner approval, acceptability of PFP by the pregnant woman, past experience with the use of injectables, and the circumstances under which the current pregnancy occurred are the major determinants of the willingness of a pregnant woman to adopt PFP. Procedures adopted at antenatal and early postnatal clinics should take these factors into consideration.

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Table 1: Sociodemographic characteristic of pregnant women and their willingness to adopt a PPF method

Sociodemographic variable	Willing to adopt postpartum FP method		O.R. (95%C.I.)	P-value	
	Yes	No			
Age	≥20 years	1136	429	2.02 (1.58-2.58)	<0.01
	<20 years	190	145	1.00	
Respondent-partner age difference	Partner more than 5 years older	440	199	0.64 (0.39-1.07)	0.24
	Partner 1-5 years older	798	347	0.67 (0.41-1.11)	
	Partner younger than respondent	72	21	1.00	
Highest completed educational level	Senior high school and above	127	100	0.54 (0.39-0.76)	<0.01
	Junior high school	595	244	1.04 (0.80-1.35)	
	Primary	317	109	1.24 (0.92-1.68)	
	None	286	122	1.00	
Ethnic group	Fanti	1217	513	1.36 (0.98-1.90)	0.06
	Other	108	62	1.00	
Religion	Christian	1242	83	1.30 (0.89-1.89)	0.17
	Other	529	46	1.00	
Christian denomination	Pentecostal and others	649	236	1.43 1.03-1.98	0.03
	Protestant	324	153	1.10 0.77-1.56	
	Catholic	131	68	1.00	
Occupation	Fishmonger and petty trader	1087	399	1.44 (0.95-2.20)	<0.01
	Government and other office workers	71	52	0.72 (0.42-1.24)	
	Student	46	38	0.64 (0.35-1.16)	
	Other	68	36	1.00	
Number of children	≥Three	362	103	2.51 1.91-3.30	<0.01
	Two	237	75	2.26 1.66-3.07	
	One	338	120	2.01 1.55-2.62	
	None	389	278	1.00	
Area of residence	Rural	652	259	2.78 (0.97-1.44)	0.10
	Semi-Rural	673	316	1.00	
Marital status	Married	790	299	1.86 (1.40-2.47)	<0.01
	Engaged or cohabiting	380	167	1.60 (1.18-2.18)	
	Single, divorced, separated or widowed	152	107	1.00	

Table 2: Effect of sociodemographic characteristic of partners and nature of relationship on the willingness of pregnant women to adopt a PFP method

Partner attributes	Willing to adopt post-partum FP method		O.R. (95%C.I.)	P-value	
	Yes	No			
Age of partner	>30years	567	224	3.57 (2.15-5.95)	<0.01
	20-30years	715	303	3.34 (2.02-5.50)	
	Less than 20 years	29	41	1.00	
Partner highest completed educational level	Senior high school and above	346	177	0.99 (0.74-1.31)	0.02
	Junior high school	581	228	1.29 (0.98-1.69)	
	Primary	168	54	1.57 (1.07-2.30)	
	None	230	116	1.00	
Partner ethnic group	Fanti	1164	160	1.37 (1.03-1.81)	0.03
	Other	484	91	1.00	
Partner religion	Christian	1156	502	0.99 (0.74-1.33)	0.97
	Other	169	73		
Partner occupation	Fishmongers and petty trading	711	294	1.93 (0.52-7.26)	0.48
	Government and other office workers	212	92	1.84 (0.48-7.04)	
	Student	56	31	1.45 (0.35-5.83)	
	Other	5	4	1.0	
Partner was previously married	Yes	364	134	1.25 (0.99-1.57)	0.06
	No	945	434	1.00	
Partner has other children	Yes	395	138	1.34 (1.07-1.67)	0.01
	No	921	430		
Years of marriage to current partner	More than 5 years	458	147	1.75 (1.34-2.28)	<0.01
	2-5 years	561	257	1.22 (0.96-1.55)	
	Less than 2 years	307	172	1.0	
Partner has other wives	Yes	126	51	1.07 (0.77-1.52)	0.66
	No	1199	524	1.0	
Current place of residence of partner	Outside of town	143	63	0.84 (0.61-1.16)	0.01
	In same town but not living together	203	113	0.67 (0.51-0.87)	
	Living together	908	337	1.00	

Table 3: Reproductive history and perception of risk of pregnancy in postpartum period, and the willingness to adopt a PFP method

Character of reproductive history		Willing to adopt postpartum FP method		O.R. (95%C.I.)	P-value
		Yes	No		
No of times pregnant	More than twice	672	203	2.25 (1.78-2.84)	<0.01
	Twice	309	137	1.53 (1.18-1.99)	
	Once (current)	344	234	1.00	
Any pregnancy ended in abortion*	Yes	183	86	0.68 (0.51-0.91)	0.01
	No	798	254	1.00	
Age of last child	More than 5 years	164	46	1.78 (1.03-3.10)	0.10
	2-5 years	704	222	1.59 (1.00-2.52)	
	Less than 2 years	60	30	1.00	
Experienced a child death	Yes	149	52	0.92 (0.65-1.30)	0.63
	No	798	256	1.00	
Circumstance of current pregnancy	Unwanted and unexpected	416	179	1.28 (1.00-1.64)	<0.01
	Wanted but unexpected	546	195	1.54 (1.21-1.96)	
	Wanted and expected	363	200	1.00	
Possibility of pregnancy when her menses have not returned post-delivery	Yes	629	272	0.81 (0.62-1.06)	0.12
	No	296	104	1.00	
Possibility of pregnancy within six months of delivery	Yes	813	331	1.11 (0.82-1.52)	0.48
	No	156	71	1.00	
Possibility of pregnancy within three months of delivery	Yes	590	226	1.31 (1.01-1.70)	0.04
	No	259	130	1.00	
Success in the past in preventing unwanted pregnancy soon after delivery	Yes	593	198	1.00 (0.76-1.30)	0.99
	No	342	114	1.00	

*No distinction was made between induced and spontaneous abortions

Table 4: Knowledge and use of various FP methods and the willingness of pregnant women to adopt a PPF method

Method		Knowledge			Use				
		Willing to adopt postpartum FP method		O.R. (95%C.I.)	P-value	Willing to adopt postpartum FP method		O.R. (95%C.I.)	P-value
		Yes	No			Yes	No		
Oral contraceptive pills	Yes	1069	405	1.76 (1.40-2.20)	<0.01	257	50	2.53 (1.83-3.49)	<0.01
	No	257	171	1.00		1069	526	1.0	
Intrauterine contraceptive device	Yes	490	232	0.87 (0.71-1.06)	0.17	9	10	0.39 (0.16-0.96)	0.03
	No	836	344	1.00		1317	566	1.0	
Injectables	Yes	1124	413	2.20 (1.73-2.79)	<0.01	301	41	3,83 (2.70-5.43)	<0.01
	No	202	163	1.00		1025	535	1.0	
Implants	Yes	881	319	1.60 (1.30-1.95)	<0.01	19	10	0.82 (0.38-1.78)	0.62
	No	445	257	1.00		1307	566	1.0	
Male condom	Yes	1184	466	1.97 (1.50-2.59)	<0.01	358	155	1.00 (0.81-1.25)	0.97
	No	142	110	1.00		968	421	1.0	
Female condom	Yes	1068	414	1.62 (1.29-2.03)	<0.01	22	13	0.73 (0.37-1.46)	0.37
	No	258	162	1.00		1304	563	1.00	
Diaphragm	Yes	300	164	0.74 (0.59-0.92)	0.01	12	7	0.74 (0.29-1.71)	0.53
	No	1025	412	1.00		1313	569	1.00	
Foaming tablets	Yes	258	137	0.77 (0.61-0.98)	0.03	13	8	0.70 (0.29-1.71)	0.43
	No	1067	258	1.00		1312	569	1.00	
Rhythm (calendar) method	Yes	757	356	0.82 (0.67-1.01)	0.06	306	147	0,87 (0.70-1.10)	0.25
	No	568	220	1.00		1019	429	1.0	
Withdrawal method	Yes	854	345	1.21 (0.99-1.48)	0.06	407	155	1.20 (0.97-1.50)	0.09
	No	471	231	1.00		918	421	1.0	
Emergency contraception	Yes	630	262	1.09 (0.89-1.32)	0.41	135	40	1.52 (1.05-2.20)	0.02
	No	695	314	1.00		1190	536	1.0	
Exclusive breastfeeding	Yes	567	205	1.83 (1.34-2.50)	<0.01	19	15	0.54 (0.27-1.08)	0.08
	No	136	90			1307	561	1.0	

Table 5: Acceptability of PPF and willingness of pregnant women to adopt a PPF method

Acceptability variables		Willing to adopt postpartum FP method		O.R. (95%C.I.)	P-value
		Yes	No		
Consider PPF acceptable	Yes	1244	372	8.55 (6.29-11.63)	<0.01
	No	79	202	1.00	
Consider that partner will use of PPF acceptable	Yes	950	193	7.78 (5.81-10.40)	<0.01
	No	138	218	1.00	
Will require partner's permission before using PPF	Yes	1136	187	2.23 (1.75-2.85)	<0.01
	No	419	154	1.00	
Willing to use postpartum without making partner aware	Yes	614	127	3.04 (2.41-3.83)	<0.01
	No	709	446	1.00	
Mother will consider PPF acceptable	Yes	625	175	3.30 (2.50-4.33)	<0.01
	No	192	177	1.00	
Mother-in-law will consider PPF acceptable	Yes	423	110	3.89 (2.84-5.33)	<0.01
	No	168	170	1.00	
Father-in-law will consider PPF acceptable	Yes	377	99	4.19 (3.01-5.83)	<0.01
	No	151	166	1.00	
Religious leader will consider PPF acceptable	Yes	473	154	2.75 (2.07-3.63)	<0.01
	No	198	177	1.00	

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